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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/651,133

08/28/2003

David B. Cranfill

CS22465RL

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01/24/2006

MOTOROLA INC

600 NORTH US HIGHWAY 45

ROOM AS437

LIBERTYVILLE, IL 60048-5343

EXAMINER

LEE, BENJAMIN C

ART UNIT

PAPER NUMBER

2632

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/651,133

Applicant(s)

CRANFILL ET AL.

Examiner

Benjamin C. Lee

Art Unit

2632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) 1-8 and 12 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 9-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-5, drawn to a vibrating transducer in a portable electronic apparatus, characterized by a “full width at half max” drive signal, classified in class 455, subclass 567; class 340, subclasses 407.1, 825.19, 7.6; class 434, subclasses 112-116.
 - II. Claims 6-8, drawn to a vibrating transducer in a portable electronic apparatus, characterized by an oscillating signal of maximum amplitude during a first period and a second maximum amplitude during a second period following and less than the first period, classified in 455, subclass 567; class 340, subclasses 407.1, 825.19, 7.6; class 434, subclasses 112-116.
 - III. Claims 9-11, drawn to a plurality of vibrating transducers in a portable electronic apparatus, characterized by a respective drive signal in the form of a multi-sine signal, classified in 455, subclass 567; class 340, subclasses 407.1, 825.19, 7.6; class 434, subclasses 112-116.
 - IV. Claim 12, drawn to a method of operating a resonant tactile vibration transducer comprising, for each of a succession of signal periods, applying a period of signal about a maximum amplitude “without overdriving” the resonant tactile vibration transducer, classified in 455, subclass 567; class 340, subclasses 407.1, 825.19, 7.6; class 434, subclasses 112-116.

The inventions are distinct, each from the other because of the following reasons:

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2. Inventions I, II, III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, each of inventions I-IV has separate utility such as acting as portable electronic apparatus having vibrating transducer characteristics as individually described without the need or addition of the others. See MPEP § 806.05(d).

3. Because these inventions are distinct for the reasons given above and the search required for one of Groups I-IV is not required for another of Groups I-IV, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. **During a telephone conversation with Mr. Vaas on 1/18/06 a provisional election was made with traverse to prosecute the invention of Group III, claims 9-11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-8 and 12 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.**

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

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7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 10-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1) Claim 10 should have depended on claim 9 instead of claim 11.

2) Claim 11 is similarly rejected due to dependency on rejected claim 10.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al. (US 2005/0036636A1).

1) Regarding claim 9:

a) Noro et al. discloses a portable electronic apparatus (Abstract) comprising: a vibration transducer comprising a mass and a transducer motor coupled to the mass and adapted to impart motion to the mass in response to electrical signals applied to the transducer motor ([0046], [0089]), an electrical circuit coupled to each transducer motor, wherein the electrical circuit is adapted to apply a multi-sine signal to each transducer motor ([0084] and Fig. 13A);

except:

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b) the claimed plurality of said vibration transducers having respective transducer motors.

While Noro et al. discloses a single vibration transducer to realize various vibration functions on a portable telephone (Abstract), Noro et al. did not indicate that a plurality of vibration transducers can not or should not be used. Thus, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to use a plurality of vibration transducers driven by said multi-sine signal from said electrical circuit in Noro et al. when vibration alerts are desired on multiple positions/angles on the portable telephone housing for improved perception and/or or ensure perception by the user.

2) Regarding claim 10, Noro et al. render obvious all of the claimed subject matter as in claim 9, including:

--the electrical circuit is adapted to apply an amplitude modulated multi-sine signal ([0086]) to each transducer.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noro et al. in view of Holyroyd (US 5473315).

1) Regarding claim 11, Noro et al. render obvious all of the claimed subject matter as in claim 10, except:

--specifying the claimed wherein the electrical circuit is adapted to apply a multi-sine that, considered without any predetermined applied amplitude modulation, is characterized by a crest factor of less than 0.5 dB.

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However, since “crest factor” is defined as the maximum peak divided by the root-mean-square (RMS) of the signal over the predetermined time interval, such that vibration signal having a low crest factor is known to be associated with smooth or good running of components, while a relatively high crest factor is associated with components gone bad as indicated by Holyroyd (col. 1, line 64 to col. 2, line 2), it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to choose the multi-sine signal for producing the portable telephone alerting vibration signal in Noro et al. that is characterized by a low crest factor (considered without any predetermined applied amplitude modulation) as indicated by Holyroyd so as to produce a more pleasant vibration as dictated by personal preference, as such vibrations are associated with smooth or good running of components, and furthermore to specify a low crest factor of less than 0.5 dB as an obvious choice within the confines of such desired “low crest factor” as dictated by personal preference.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5327120, 5546069, 20040209654, 20030222766

--Similar vibration transducer systems.

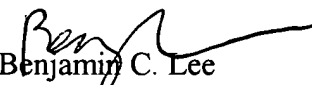
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin C. Lee whose telephone number is (571) 272-2963.

The examiner can normally be reached on Mon -Thu 11:00Am-7:30Pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Benjamin C. Lee
Primary Examiner
Art Unit 2632

B.L.